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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,187	04/25/2001	Michael L. Nelson	1857.0350000	3650

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EXAMINER

ESPLIN, DAVID B

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/841,187

Applicant(s)

NELSON ET AL.

Examiner

D. Ben Esplin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☒ Claim(s) 15-18, 29 and 46-48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Information Disclosure Statement***

Examiner acknowledges the receipt of proprietary documents along with the IDS filed 5/20/03, and Applicant request that Examiner state in the next Office Action whether or not the material is found to be important to deciding patentability. However, this is not in keeping with current procedure of the USPTO. Since the importance of the document may not be clear until the prosecution of the application is brought to resolution, a decision on the petition under CFR 1.59(b) to expunge information submitted under MPEP 724.02 is not made until the close of prosecution (see MPEP 724.05 I final paragraph).

### ***Claim Objections***

Claims 15-18, 29, and 46-48 are objected to because of the following informalities: A Referring to claims 15-18 and 46-48, these claims refer to the specific region of claim 1 as being plural regions. It splits the specific region based on the steps of claim 1. However, the specific region referred to in the various steps of claim 1 are one, and only one, element with a common antecedent. This improper splitting of a single element into multiple elements is viewed as indistinct language and renders these claims unclear. Further, it is suggested that if Applicant wishes to refer to more than one specific region that the specific regions be labeled first specific region, second specific region, etc., etc. For examination purposes, claims 15-18 have been examined as though they had been rewritten to clearly define separate specific regions to the best of the Examiners ability.

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In reference to claim 29, the limitation that the second *type* of sensor used to determine the set of measurements is distinct from, yet substantially identical to, the second *type* of sensor used to determine the specific measurement is unclear since one type of something may not be either substantially identical to, or distinct from itself. To facilitate examination, it has been assumed that Applicant intended to omit the word *type* from this claim and give the sensor a proper antecedent basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11 and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The use of a proximity probe as a calibration sensor is not well known in the art and is given only cursory mention in the specification. While near-field and atomic-force probes are well known as alignment detectors for detecting an XY position of a wafer, such a probe disposed for detecting a Z axis position is not common knowledge within the art. Consequently, Applicants passing reference is not enabling without an explicit description, with accompanying drawings, of how such an apparatus would function.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10, 12-40, and 42-51 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,208,407 to Loopstra.

FIG. 3 of Loopstra schematically shows a focus system for focusing an illumination pattern onto a substrate including a calibration sensor (first height sensor 150), a secondary control sensor (second height sensor 160) producing a first measurement, a primary control sensor (third height sensor 180), and a focus adjuster (Z actuator in substrate holder 111, see col. 15 lines 56-61). The first measurement corresponds to an output that the secondary control sensor is at the proper focus distance (col. 15 lines 20-26), and the second measurement corresponds to an output of the primary control sensor while the specific region is positioned under the exposing area, and the focus adjuster adjusts the position of the specific region based on a difference between the first and second measurements, until the primary control sensor produces a second measurement identical to the first measurement (col. 15 lines 56-61). Loopstra further teaches that the calibration sensor may be an air gauge, a capacitance gauge, or an optical gauge (col. 14 lines 29-32), and that an exposing area (projection system 305) may include a lens, as in an optical system, or project an electron beam, or a shadow (col. 23 lines 21-

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27). Loopstra also teaches that the substrate should be focused by the calibration sensor for each specific region on the substrate (col. 4 lines 12-14), thus teaching that the substrate should be moved according to the exposure pattern.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,341,007 to Nishi et al. discloses a focusing system with two separate focus sensing stations.

U.S. Patent No. 6,509,957 to Tanaka discloses a focusing system for a lithographic apparatus including a calibration sensor remote from the exposure area.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Ben Esplin whose telephone number is (703) 305-4022. The examiner can normally be reached on Mon.-Fri. (8am-4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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DBE

June 12, 2003

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